To: Distribution

From: David M. Jordan

Date: September 9, 1974

Subject: System Maintenance Status, August 10 - September 6

1. Significant Events

The new contract with Honeywell for the Multics system was finally signed, and is retroactive to July 1. The contract covers a three year period, but is cancelable after each year.

The Honeywell Large System Users' Association Multics Subcommittee met at MIT on August 23, with about 50 people in attendance. As usual, a wide variety of topics were discussed, but it was most interesting to hear each of the sites make strong comments on their desires to see the Multics system more strongly supported by Honeywell. Hopefully this kind of repeated praise of the system and desire for more commitment from Honeywell will produce noticable changes in the current Multics support effort.

Arlene and Grace have left for a two week course in advanced PL/1 programming being given in New York by IBM. It is hoped that this will give both of them much stronger PL/1 background than can be gotten through the do-it-yourself methods most of us have struggled with.

A. Online System Installations

During this reporting period there were 154 changes to the online libraries, including new versions of both bcpl and runoff. With Arlene in New York for two weeks and with her work on the Unbundled library and recompilations there is a strong probability that we will fall behind on online installations during the next month, but we're hopeful things won't get too out of hand.

B. Other Installations

During the period from August 10 to September 6 we installed hardcore systems MSS 23.15a, 23.16, 23.16a, 23.17, 23.17a, and BOS system 1.40. In addition to fixing a large number of bugs, these installations included the logging of history registers after Op-not-completes, new hphcs_ entries for use by the backup system, the first changes for AIM, and

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numerous fixes and minor changes for BOS.

C. Crash Analysis

During this reporting period we were unable to maintain our previous level of system reliability. While a number of factors contibuted to this problem, the most noticable was a dramatic increase in the number of hardware failures. In addition, the 6 unanalyzable crashes are a serious concern and we strongly hope that such problems will not continue.

	Aug 10-16	Aug 17-23	Aug 24-30	Aug 31-6	Sep	Total
Hardware	9	5	4	4		22
Hardware Suspected	1	2	0	0		3
Software	0	2	3	1		6
Software Suspected	1	0	0	0		1
Not Yet Analyzed	0	1	0	1		2
Not Available	3	3	0	0		6
Other	0	1	0	1		2
Total	14	14	7	7		42

2. Problem Areas

We continue to be plagued with Op-not-complete problems on CPU B. We've encountered these problems for well over a month, but, as yet, no solutions have been found. All in all this leads one to question the current hardware diagnostic capabilities. We can only hope that this particular problem is unusual in the difficulty of locating it.

We have made the first system changes for the new AIM (Access Isolation Mechanism) and have encountered the first of what could be a large number of problems. In this case, a new version of append was installed but had to be pulled due to a problem in creating links.

With Arlene in New York for two weeks there is a strong possibility that our changes for the Unbundled library and for recompilation of all submissions may have to be slipped past the original completion date of October 1. We hope this won't be necessary, but Arlene will only have a week after she gets back in which to tie up the remaining loose ends.

Gary's installation tools have slipped again, but progress continues to be made and it begins to look like they may be completed in the not too distant future.

3. Task Status

The work to allow recompilation of all submissions is nearing completion. In addition Arlene has been working on the addition of the Unbundled library. At this point it appears that the major installation exec_coms have been completed. Some work remains on the submission testing procedures and on some of the peripheral exec_coms (such as library cross_refs), but we hope to have all changes completed shortly after Arlene returns from New York.

Grace has resubmitted the MCR for the user notification of backup errors after a sparsely attended design review. Hopefully this will be approved and she'll be able to get it submitted in the next few weeks. In addition, Grace has been working to upgrade the test_tape program for the MTS-500's. At this point she has corrected the problems in the interface to the tape DCM; and she is now working on some enhancements (such as the ability to specify 1600 bpi) which were not in the original version.

Peter continues to make minor additions and changes to update_seg, but his major effort of late has been to learn crash analysis. At this point things look quite reasonable in this area and the analysis of routine crashes has been pretty much given over to him. We expect to turn over the major responsibilities for crash analysis to him gradually as his experience in this area grows.

Gary's work on the library tools has slipped once again, but he has completed the conversion of library_map to use the library descriptors and it appears that he is making significant progress on completing the rest of his tasks in this area.

4. Work Planned for the Coming Month

During the next month we expect to complete work on the new Unbundled library, the recompilation of all submissions, the user notification of backup errors and the new version of test_tape. In addition, we're hopeful that Peter's crash analysis will continue to improve and that Grace will be able to take over primary responsibility for hardcore system installations.

TASK AREA   Maintenance (Online Libraries)

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Online installations	Scherer (Kelley)	continuing task		
Maintain source lists	Roach	continuing task		
Maintain cross reference lists	Scherer (Kelley)	continuing task		new lists generated on 8/30/74
Maintain listings	Dratel	continuing task		

TASK AREA Maintenance (Hardcore and Hardware)

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Crash Analysis	Jordan (Kelley)	continuing	task	Kelley beginning to take over primary responsibility.
Hardcore Installations	Ackerman-Lewis (Kelley)	continuing	task	Ackerman-Lewis now doing most of the work, Kelley supervising.
Operator Interface	Jordan (Roach)	continuing	task	
Maintain Hardcore Cross References	Jordan	continuing	task	New list should be generated

TASK AREA   User Interface

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Consulting	All	continuing task		
MPRF Handling	All	continuing task		
MMTU Handling	Spall	continuing task		

TASK AREA Library Maintenance Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Maintain and improve library submission tests.	Scherer	continuing task		
convert cross references to v2,	Scherer	4/15/73		Version of include cross ref which works on any archives installed
Upgrade all online installation tool exec_coms for the 6180 and install in the libraries and document them.	Scherer	3/26/73		Work beginning with study of current ec's.
Add ec's, etc. for the "unbundled" library	Scherer (All)	8/8/74	10/1/74	Standard ec's done, peripheral ec's (cross ref, etc.) Still need to be completed
Modify submission/installation procedures to accommodate recompilation of all submissions	Scherer (All)	3/8/74	10/1/74	Essentially completed, minor fixes may be needed.
		3/8/84	10/1/74	

TASK AREA   Programming Support

TASK DESCRIPTION	PERSONNEL	START	FINISH	CHANGES/STATUS
Look into compare source statement as replacement for cpa.				Compare pl1 source statements ignoring differences in comments and formatting
Design and implement an online system for registering modules being worked on, etc.				Proposal submitted to Gintell. Hope he has man-power
Look into the possibility of maintaining a module change history log.				May be part of sign out log project
Look into the possibility of making the source libraries generally accessable to users.				
Create a system for processing backup error files to allow notification to users of errors encountered	Lewis	5/1/74	6/15/74	Code complete, MTB published
		5/1/74	9/30/74	MCR resubmitted

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-M	CHANGES-STATUS
MTS: write Honeywell PLM - Library Maintenance Manual	Kelley				continuing
update_seg: increase size of online installations (MCR 188)	Kelley	07/08/74	07/10/74		Installed
update_seg: modify documentation task to report bindfile changes.	Kelley	07/15/74 07/29/74	07/15/74 08/02/74		Installed
msa_manager_: Improve consistency of msa_manager_ (MCR 660)	Kelley	07/10/74	07/11/74		Installed
update_seg: modify documentation task to document unbundled library (MCR 735)	Kelley				MCR approved
update_seg: modify to set the default max length of segments to their current length; add option to set length if different from current length.	Kelley				MCR submitted

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
lex_string_: code a lexical analyzer to parse a character string into tokens which are processed by the compilers below	Dixon	12/15/73	01/10/74	.5	Done
		12/15/73	02/11/74	.8	
reduction_compiler (rdc): code the reduction compiler (used to code the library descriptor compiler)	Dixon	01/01/74	01/18/74	.5	Done
		01/01/74	02/11/74	2.0	
library_descriptor_compiler (ldc): code the library descriptor data base compiler	Dixon	12/15/73	01/10/74	2.0	Done
		12/15/73	07/12/74	3.0	
multics_libraries_.lc: code the library descriptor for Multics System Libraries	Dixon	02/28/74	03/01/74	.2	Done
		03/05/74	03/18/74		
multics_library_search_: recode to use multics_libraries_.ld generated by library_descriptor_compiler	Dixon	01/16/74	01/15/74	.5	Underway
		03/01/74	09/20/74		
library_info (li): code, document command which replaces msl_info (HIGH)	Dixon	12/05/73	10/30/73	1.5	Add options to command
		10/05/73	09/30/74		
library_map (lm): code, document command which replaces msl_global_format (HIGH)	Dixon	05/25/73	06/25/73	2	Add options to command
		06/30/73	09/30/74		
library_print (lpr): code, document command which prints groups of library segments (HIGH)	Dixon	05/16/73	04/31/73	1	prints segments now; make it print archive components, pt segs, chase links, print MSFs, etc
		10/02/73	09/30/74	2	
li/lm: get and output ACLs, initial ACLs, extra status (MEDIUM)	Dixon	12/15/73	12/30/73	1.5	
			10/15/74		
li/lm/lpr: add sorting options to command (LOW)	Dixon	01/01/74	04/15/74	.5	
			10/15/74		

TASK DESCRIPTION	PERSONNEL	START	FINISH	M-W	CHANGES-STATUS
document the above procedures and subroutines	Dixon	03/01/74	05/30/74	3	documentation on reduction_compiler,
		03/01/74	10/30/74	5	lex_string_, lex_error_ done: MTB published
lr/lpr: gather and output statistics on library segments (LOW)	Dixon			1.5	
library_search_rules (lsr): code, document command which lists directories searched by li/lm/lpr for a given library (LOW)	Dixon			1.5	
library_get (lgt): rewrite gls to use library descriptor				2	
library_cleanup (lclc): clean up the code; use library descriptor				1.5	
library_object_cref (loc): rewrite cross_reference to use library descriptor				2.5	
library_include_cref (lic): rewrite lcref to use library descriptor & source maps in standard obj segs				2	